NAVSEA
STANDARD ITEM

FY-02

ITEM NO: 009-70
DATE: 14 SEP 2000
CATEGORY: I

1. SCOPE:

1.1 Title: Fire Prevention and Housekeeping for Unmanned Craft; accomplish

2. REFERENCES:

a. 29 CFR Part 1915, OSHA

b. National Fire Protection Association Standard 51B

c. National Fire Protection Association Standard 312

d. National Fire Protection Association Standard 306

3. REQUIREMENTS:

3.1 Comply with the requirements of 2.a through 2.d and this item to determine whether or not an explosive or other dangerous atmosphere exists in spaces and piping aboard the craft, including sewage collection and holding tanks, and then control hot work and entry to those spaces to preclude damage to the craft or injury to personnel.

3.1.1 Provide training for Competent Persons and provide updated training on an annual basis by a National Fire Protection Association (NFPA) certified Marine Chemist using Section 1915.7 of 2.a as guidance or under an NFPA approved Competent Person Training Program. The length of the initial training class shall be at least 24 hours. Yearly refresher training shall be at least 8 hours.

3.1.2 Post a copy of the Marine Chemist’s certificate or Certified Industrial Hygienist’s or Competent Person’s test/inspection record at each access to the affected space while work in the space is in progress. A copy of the certificate or test/inspection record shall also be delivered to a location designated by the SUPERVISOR. In the event that the space is found not to be Safe for Workers/Safe for Hot Work, the space shall be posted accordingly and the SUPERVISOR and craft shall be notified immediately.

3.1.2.1 Initial certification of spaces that require a Certified Marine Chemist’s certificate or Certified Industrial Hygienist’s

test/inspection and subsequent certification made in support of work operations shall be effective for 24 hours or until conditions change which would void the certificate (whichever comes first).

3.1.2.2 Subsequent tests and inspections which continue the space certifications shall be made by a Competent Person to support work operations and shall be effective for 24 hours or until conditions change (affecting the designation for which the spaces were certified), whichever comes first.

3.1.2.3 The 24-hour interval for subsequent tests and inspections made by a Competent Person as described in 3.1.2.2 is not required during non-working periods (not in excess of 72 hours); however, the Competent Person shall perform the tests and inspections required on all confined spaces involved, and affected adjacent spaces, before anyone is permitted to enter those spaces, on the next working day. Confined spaces and enclosed spaces and affected adjacent spaces shall be checked prior to commencing hot work operations on the next working day following the non-working period (not to exceed 72 hours). If the 72-hour non-working period is exceeded, then the certifications in 3.1.2.1 are required.

3.1.3 Tank cleaning personnel shall be trained annually on safety practices to include a discussion of safety information found in Subparts A, B, and Section 1915.152 of Subpart I of 2.a.

3.1.4 Submit one legible copy of each of the following documents to the SUPERVISOR prior to the accomplishment of work requiring the services identified below.

3.1.4.1 A roster of designated Competent Persons, along with contractor certification that the training in 3.1.1 has been completed within the past year. Updates to the roster each time Competent Persons are added, deleted, or recertified.

3.1.4.2 A list of Competent Person(s) and tank cleaning personnel who will enter or work in confined spaces, including company name, badge number, and date training was provided in accordance with 3.1.1 and 3.1.3.

3.1.4.3 A list of the names of the Shipyard/Plant Rescue Team Members, along with contractor certification that the training in 3.1.1 has been completed within the last year, or certification that arrangements have been made for an outside rescue team to respond promptly to a request for rescue service.

3.1.4.4 A copy of the program to be utilized to train fire watches in the areas identified in 2.a and 2.b, including steps to be taken by the fire watch and hot work operator prior to accomplishment of hot work, proper selection and use of fire extinguishing equipment and other safety equipment, relationship between the fire watch and hot work operator, proper

fire reporting procedures and other sounding of fire alarms, and reporting of accidents to the ship's quarterdeck. This training should also include theory and practical (hands-on) fire suppression techniques. This training shall be provided to all newly assigned fire watches, with annual updates provided to personnel. ***Provide visible means of identifying trained fire watches, i.e., badge, sticker, vest, etc.***

3.1.5 Notify the SUPERVISOR prior to entry into spaces designated as Immediately Dangerous to Life or Health (IDLH) as defined in Paragraph 1915.11(b) of 2.a.

3.2 Provide a written notice for each job or separate area of hot work aboard the craft.

3.2.1 The notice shall state a description of the work to be done, the specific location of the hot work and compartments adjacent to decks, bulkheads, and similar structures upon which hot work is to be accomplished, the time hot work will commence, and current gas-free status of the area, the absence or existence of combustible material in the vicinity of the operation, and if combustible material exists, what action shall be taken to protect the material from fire, the provision and assignment of a fire watch, and the affirmation that conditions at the work site (ventilation, temporary lighting, accesses) permit the fire watch to observe all areas where the hot work constitutes a fire hazard.

3.2.2 The notice shall affirm that a suitable, fully-charged fire extinguisher shall be available at the job site and provide for an inspection of the area 30 minutes after completion of the hot work or the cessation of hot work at the job site as the final action to complete the notice if no further fire hazard exists.

3.2.3 The notice shall be signed by a supervisor specifically designated as responsible for coordination of the hot work and the fire watch requirement.

3.2.4 One copy of each notice shall be given to the SUPERVISOR.

3.2.5 The notice to the SUPERVISOR shall precede the initiation of the actual hot work. A new notice is required if work is interrupted due to loss of gas-free status.

3.3 Provide fire watches, trained as outlined in 3.1.4.4, at all affected areas where hot work is being accomplished. Provide fire extinguishing equipment as described in 2.a through 2.c. Fire watches and equipment shall meet the following requirements, as a minimum:

3.3.1 A firewatch(es), other than hot work operator, is required when:

3.3.1.1 Any flame cutting, welding, plasma cutting, arcing and gouging, electric arc welding, thermal spraying or any other hot work which produces sparks or slag that can be dropped or thrown or that causes heat to be transferred through a deck, bulkhead, or overhead to a location not visible to the hot work operator is being done.

3.3.1.2 Combustibles have not been removed or protected from heat conduction or ignition sources.

3.3.1.3 Equipment cannot be protected from falling sparks.

3.3.1.4 Openings in decks, bulkheads or overheads cannot be protected.

3.3.1.5 Ducts and conveyor systems cannot be blanked off, protected or shut down.

3.3.2 Each fire watch attending workers performing hot work shall be equipped with a fully-charged and operable fire extinguisher and shall remain at the job site for at least 30 minutes after the completion of hot work and until released in accordance with 3.3.2.

3.3.3 Where several workers are performing hot work at one site, the fire watch shall have a clear view of and immediate access to each worker performing hot work.

3.3.3.1 No more than four workers shall be attended by a single fire watch.

3.3.4 In cases in which hot material from hot work may involve more than one level, as in trunks and machinery spaces, a fire watch shall be stationed at each level unless positive means are available to prevent the spread or fall of hot material.

3.3.5 In cases where hot work is to be performed on a bulkhead or deck, combustible material shall be removed from the vicinity of the hot work on the opposite side of the bulkhead, overhead, or deck, and a fire watch shall be posted at each location.

3.3.5.1 If multiple blind compartments are involved in any hot work job, fire watches shall be posted simultaneously in each blind area.

3.4 Locate oxygen, acetylene, or gas supply systems off the craft. Manifolds connected to pierside supply systems may be placed on board as long as they are equipped with a shutoff valve located on the pier. The pierside shutoff valve shall be in addition to the shutoff valve at the inlet to each portable outlet header required by 2.a.

3.4.1 Liquid oxygen (LOX) tanks used for fuel gas/oxygen operations shall be stored to prevent collisions by trucks, forklifts, falling objects, etc.

3.4.2 LOX tanks shall be staged in designated locations on the quay wall/pier to be determined jointly by the contractor/ship/SUPERVISOR.

3.4.3 When gas cylinders are required on board, they shall be located on the weather decks and shall be secured and in an upright position. The number of in-use cylinders shall be limited to those which are required for work in progress and which have pressure regulators connected to the cylinder valves. On board reserve gas cylinders shall not exceed one-half the number of in-use cylinders and shall be located in a remote area of the weather decks.

3.4.4 When not in use, gas cylinders on board shall have valves closed, lines disconnected, protective cover (cap) in place, and shall be secured and in an upright position.

3.4.4.1 Overnight and at the change of shifts, the torch and hose shall be removed from confined and enclosed spaces. Open end fuel gas and oxygen hoses shall be immediately removed from confined or enclosed spaces when they are disconnected from the torch or other gas consuming device.

3.4.5 Upon completion of oxygen - fuel gas system hook-up, accomplish a pressure drop test in open air to include the torch, hoses, and gages.

3.4.5.1 Apply pressure to the system. Back off pressure by turning off valve supplying gases to the system. If the pressure on the gage drops, a leak on the system exists. If the pressure on the gage does not drop, the system is tight.

3.4.5.2 After applying pressure, wait two or three minutes to ensure pressure does not drop.

3.5 Use fire retardant materials aboard or adjacent to the craft for staging, screening, temporary covers, shelters, deck covering, and ventilation ducts.

3.5.1 Lumber shall be fire retardant in accordance with Category One, Type I, of MIL-L-19140. Plywood and staging boards shall be Category 2, Type II, of MIL-L-19140, and shall be marked with date of treatment, with exterior surfaces dyed or stained to a blue to blue green color range.

3.5.2 Storage of material aboard shall be limited to that which is required for work in progress.

3.5.3 Prior to bringing equipment or working material aboard, its crating and packing shall be removed. If the equipment or material may be

damaged during handling, the crating and packing shall be removed immediately after the equipment or working material is brought aboard and taken ashore for disposal.

3.5.4 Temporary lights shall have three-conductor cable, guard or shield, hook, and lamp holder. Exposed non-current-carrying metal parts of the fixture shall be grounded either through a third wire in the cable containing the current conductors, or through a separate wire which is grounded at the fixture's voltage source.

3.5.5 Flammable liquids with a flash point of 150 degrees Fahrenheit or less, including degreasers, solvents, and fuels shall be kept in safety cans when not in actual use or when left unattended and limited to one day's supply for on board use.

3.5.6 Rigging of hoses, welding leads, and temporary lights shall be kept clear of the decks on temporary trees or brackets and be arranged to minimize tripping and other safety hazards and to allow free access through doors, hatches, and passageways.

3.5.7 Ensure at least one unobstructed access to each main and auxiliary machinery space.

3.6 Accomplish a fire prevention and housekeeping inspection on a weekly basis whenever work is in progress. The inspection shall be made jointly with the SUPERVISOR. A written report of the discrepancies and corrective action to be taken shall be prepared by the contractor and copies distributed to the SUPERVISOR within four hours after completion of the inspection.

3.7 Report verbally each accident/fire occurring on the craft involving contractor/subcontractor personnel to the SUPERVISOR as soon as management becomes aware of such an event.

3.7.1 Provide a formal written report of the event to the SUPERVISOR within 24 hours of each accident requiring medical treatment, and each fire. The written report shall contain the name and ID number of each injured person, date and time of accident/fire, extent of each personal injury or property damage, contractor/subcontractor name, Job Order, type of accident/fire, location of event (craft name and hull number, space, compartment), and a brief description of the event including occurrences leading up to the accident/fire.

4. NOTES:

4.1 Recognizing a conflict between the definition of hot work in 2.a and 2.d, in instances where certification is required by a Certified Marine Chemist, the decision of the Certified Marine Chemist shall prevail.